

## Title (en)

CLOSED LOOP FEEDBACK CONTROL OF MOTOR VELOCITY OF A SURGICAL STAPLING AND CUTTING INSTRUMENT BASED ON MEASURED TIME OVER A SPECIFIED DISPLACEMENT DISTANCE

## Title (de)

GESCHLOSSENE RÜCKKOPPLUNGSREGELUNG DER MOTORDREHZAHL EINES CHIRURGISCHEN KLAMMERVORRICHTUNGS- UND SCHNEIDINSTRUMENTS BASIEREND AUF GEMESSENER ZEIT ÜBER EINE BESTIMMTE VERLAGERUNGSDISTANZ

## Title (fr)

COMMANDE DE RÉTROACTION EN BOUCLE FERMÉE DE LA VITESSE DE MOTEUR D'UN INSTRUMENT D'AGRAFAGE ET DE COUPE CHIRURGICAL SUR LA BASE D'UN TEMPS MESURÉ SUR UNE DISTANCE DE DÉPLACEMENT SPÉCIFIÉE

## Publication

**EP 3785645 A1 20210303 (EN)**

## Application

**EP 20201592 A 20171221**

## Priority

- US 201715628060 A 20170620
- EP 17209393 A 20171221

## Abstract (en)

A motorized surgical instrument is disclosed. The surgical instrument includes a displacement member, a motor coupled to the displacement member, a control circuit coupled to the motor, a position sensor coupled to the control circuit, and a timer circuit coupled to the control circuit. The control circuit is configured to receive, from the position sensor, a position of the displacement member in a current zone defined by a set displacement interval, measure time at a set position of the displacement interval, wherein the measured time is defined as the time taken by the displacement member to traverse the displacement interval, and set a command velocity of the displacement member for a subsequent zone based on the measured time in the current predefined zone.

## IPC 8 full level

**A61B 17/072** (2006.01)

## CPC (source: EP US)

**A61B 17/07207** (2013.01 - EP US); **A61B 17/1626** (2013.01 - US); **A61B 34/76** (2016.02 - US); **A61B 2017/00017** (2013.01 - EP US); **A61B 2017/00022** (2013.01 - US); **A61B 2017/00039** (2013.01 - US); **A61B 2017/00119** (2013.01 - EP US); **A61B 2017/00123** (2013.01 - EP US); **A61B 2017/00398** (2013.01 - EP US); **A61B 2017/00725** (2013.01 - EP US); **A61B 2017/00734** (2013.01 - EP US); **A61B 2017/320052** (2013.01 - US)

## Citation (applicant)

- US 9072535 B2 20150707 - SHELTON IV FREDERICK E [US], et al
- US 2014263541 A1 20140918 - LEIMBACH RICHARD L [US], et al
- US 2014263551 A1 20140918 - HALL STEVEN G [US], et al
- US 2014263552 A1 20140918 - HALL STEVEN G [US], et al
- US 201615130590 A 20160415
- US 8210411 B2 20120703 - YATES DAVID C [US], et al
- US 7845537 B2 20101207 - SHELTON IV FREDERICK E [US], et al

## Citation (search report)

- [XP] EP 3231371 A1 20171018 - ETHICON LLC [PR]
- [A] US 2011139851 A1 20110616 - MCCUEN DAVID M [US]
- [A] EP 3078334 A1 20161012 - COVIDIEN LP [US]

## Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

## DOCDB simple family (publication)

**EP 3417803 A1 20181226; EP 3417803 B1 20201014**; BR 112019026918 A2 20200630; BR 112019026918 B1 20240123; CN 110769760 A 20200207; CN 110769760 B 20230113; EP 3785645 A1 20210303; EP 3785645 B1 20240403; EP 3785645 C0 20240403; JP 2020524560 A 20200820; JP 7297684 B2 20230626; US 11382638 B2 20220712; US 2018360472 A1 20181220; WO 2018234890 A1 20181227

## DOCDB simple family (application)

**EP 17209393 A 20171221**; BR 112019026918 A 20180517; CN 201880041771 A 20180517; EP 20201592 A 20171221; IB 2018053489 W 20180517; JP 2019570449 A 20180517; US 201715628060 A 20170620